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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/883,007	06/15/2001	Yingqiu Jiang	0127/1101.019	9663

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EXAMINER	
SEFER, AHMED N	
ART UNIT	**PAPER NUMBER**
2826	

DATE MAILED: 10/23/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/883,007	JIANG ET AL	
	Examiner	Art Unit	
	A. Sefer	2826	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 July 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-6,11-24 and 28-37* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-6,11-24 and 28-37* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. Applicant's arguments with respect to claims 1-6, 11-24 and 28-37 have been considered but are moot in view of the new ground(s) of rejection.

Double Patenting

2. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

3. Claims 1-6, 11-24 and 28-37 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-22 of U.S. Patent No. 6,833,891. Although the conflicting claims are not identical, they are not patentably distinct from each other because both the application and USPN 6,833,891 disclose similar display device.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1-5 and 11-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Murai et al. ("Murai") USPN 5,959,707 in view of Faris et al. ("Faris") US PG-Pub 2004/0247824.

Murai discloses in figs. 14-24 a cholesteric liquid crystal (twistic nematic) polarizing device comprising: a substrate 23/33 or glass (as in claim 11); an alignment layer 21/31 or polymide (as in claim 12); and a cholesteric liquid crystal layer including multiple domains A/B skewed at distribution angles (as in claim 4) and including a plurality of sub-domains, said sub-domains being disposed within a distribution of angles relative to said at least one domain (as in claim 3) and, each of said domains skewed at an angle relative to a plane parallel to said substrate or skewed at a substantially uniform angle (as in claim 2), but does not specifically disclose that each of said domains are skewed at a random angle.

Faris discloses (figs. 2 and 3 and pars. 99-101 and 205-208) a cholesteric liquid crystal device comprising a including multiple domains skewed at a random angle relative to a plane parallel to a substrate.

Therefore, it would have been obvious to one skilled in the art at the time the invention was made to incorporate Faris' teachings with Murai's device so as to improve brightness as taught by Faris.

As for claim 5, Murai discloses a plurality pixel regions -- fig. 16 shows a liquid crystal layer within a single pixel.

As to claim 13, Murai discloses an LCD including the CLC polarizing device.

6. Claims 6 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Murai in view of Faris as applied to claim 1 above, and further in view Ma ("Ma") USPN 5,796,454.

The combined references disclose the device structure as recited in the claim, but do not specifically disclose pixel regions arranged in a repeating array of different colors.

Ma discloses (see figs. 5 and 7 and col. 4, lines 30-34 and col. 9, lines 59-67, col. 10, lines 1-13 and abstract) a cholesteric LCD comprising monochromatic device (as in claim 14) wherein pixel regions are arranged in a repeating array of red pixels, green pixels and blue pixels, said red pixels reflecting circularly polarized red light, said green pixels reflecting circularly polarized green light and said blue pixels reflecting circularly polarized blue light.

Therefore, it would have been obvious to one skilled in the art at the time the invention was made to incorporate Ma's teachings since that would increase the contrast ratio of the LCD as taught by Ma.

7. Claims 15-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Willet et al. ("Willet") USPN 5,325,218 in view of Murai and Faris.

Willet discloses in fig. 2 a reflective liquid crystal display comprising: a planar cholesteric liquid crystal polarizing device; a liquid crystal cell 20; and an internal quarter-wave retarder 30; said cholesteric liquid crystal polarizing device, said liquid crystal cell, and said quarter wave retarder being superposed with one another, but omits a cholesteric liquid crystal polarizing device, including multiple domains, each of said domains skewed at an angle relative to a plane parallel to the cholesteric LCD.

Murai discloses in figs. 14-24 a cholesteric liquid crystal polarizing device including multiple domains skewed at a substantially uniform angle (as in claim 16) or skewed at

distribution angles (as in claim 18) and including a plurality of sub-domains, said sub-domains being disposed within a distribution of angles relative to said at least one domain (as in claim 17).

Faris discloses (figs. 2 and 3 and pars. 99-101 and 205-208) a cholesteric liquid crystal device comprising a including multiple domains skewed at a random angle relative to a plane parallel to a substrate.

Therefore, it would have been obvious to one skilled in the art at the time the invention was made to incorporate Murai's teachings with Willet's device since that would provide a superior visual angle characteristics as taught by Murai. It would have been obvious to incorporate Faris' teachings so as to increase brightness as taught by Faris.

8. Claims 19, 20, 23, 28 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Willet in view of Murai and Faris as applied to claim 15 above, and further in view of Ma.

The combined references disclose the device structure as recited in the claim, but do not specifically disclose pixel regions arranged in a repeating array of different colors.

Ma discloses (see figs. 5 and 7 and col. 4, lines 30-34 and col. 9, lines 59-67, col. 10, lines 1-13 and abstract) a cholesteric LCD, wherein pixel regions are arranged in a repeating array of red pixels, green pixels and blue pixels, said red pixels reflecting circularly polarized red light, said green pixels reflecting circularly polarized green light and said blue pixels reflecting circularly polarized blue light.

Therefore, it would have been obvious to one skilled in the art at the time the invention was made to incorporate Ma's teachings since that would increase the contrast ratio of the LCD as taught by Ma.

As for claims 19 and 20, Ma discloses (see fig. 6 and col. 10 14-62) a normally white and a normally black mode device.

As for claims 28 and 29, Ma discloses (see fig. 2 and claim 14) a cell 210 comprising a twisted agent (as in claim 28) and a polarizer and absorbing medium 260 (as in claim 29).

9. Claims 30-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Willet in view of Faris and Ma.

Willet discloses in fig. 2 a reflective liquid crystal display comprising: a planar cholesteric liquid crystal polarizing device; a liquid crystal cell 20; and an internal quarter-wave retarder 30; said cholesteric liquid crystal polarizing device, said liquid crystal cell, and said quarter wave retarder being superposed with one another, but omits a cholesteric liquid crystal polarizing device, including multiple domains, each of said domains skewed at an angle relative to a plane parallel to the cholesteric LCD and an absorbing medium.

Faris discloses (figs. 2 and 3 and pars. 99-101 and 205-208) a cholesteric liquid crystal device including multiple domains skewed at a random angle relative to the cholesteric liquid crystal.

Ma discloses (see fig. 2 and claim 14) a cholesteric device comprising a liquid crystal cell 210 comprising a twisted agent (as in claim 33) and an absorbing medium 260.

Therefore, it would have been obvious to one skilled in the art at the time the invention was made to incorporate Faris' teachings with Willet's device so as to improve brightness as taught by Faris. It would have been obvious to employ an absorbing medium, since that would reduce a heat build-up.

10. Claims 21, 22, 24, 31 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Willet in view of Murai, Faris and Ma as applied to claims 15 and 30 above, and further in view of Takei ("Takei") USPN 5,559,615.

The combined references disclose the device structure as recited in the claim, but do not specifically disclose a thin film transistor array 14 having a plurality pixel regions.

Takei discloses a liquid crystal cell disposed adjacent to a thin film transistor array 14 having a plurality pixel regions.

Therefore, it would have been obvious to one skilled in the art at the time the invention was made to incorporate thin film transistor array having a plurality pixel regions so as to provide an increase image contrast as taught by Takei.

As for claim 22, Takei discloses cholesteric liquid crystal device comprising a plurality pixel regions.

Regarding claims 24 and 32, Takei discloses a cholesteric liquid crystal comprising a plurality of pixel regions, which are in registration with a plurality of pixel regions of a TFT array 14.

11. Claims 34-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Willet in view of Faris and Ma as applied to claim 30 above, and further in view of Van Haaren et al. ("Van Haaren") USPN 5,737,044.

The combined references disclose a cholesteric LCD device structure as recited in the claim including black mode device and white mode device (see Ma fig. 6, col. 6, lines 38-67 and col. 10, lines 14-62), said cholesteric polarizing device reflecting left-hand or right-hand circularly polarized light, but fail to disclose a retarder oriented at 45 degrees.

Van Haaren discloses (see col. 7, lines 1-5) a retarder oriented at 45 degrees to a polarization direction.

Therefore, it would have been obvious to one skilled in the art at the time the invention was made to incorporate Van Haaren's teachings since that would provide low viewing-angle dependence.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to A. Sefer whose telephone number is (571) 272-1921.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nathan Flynn can be reached on (571) 272-1915.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

ANS
October 15, 2006

A. Sefer
Patent Examiner
Art Unit 2826